in health care consumed for the treatment of multiple sclerosis (MS) in patients enrolled in private (commercial) and publicly (Medicaid) funded health insurance programs. **METHODS:** In a retrospective analysis, integrated medical and pharmacy claims data were analyzed to select patients with a diagnosis of MS (ICD-9 code 340) during 2012 calendar year. The presence of comorbidities was also determined using ICD-9 codes present on medical claims. Prescription drug use was evaluated by pharmacy claims and drug-specific billing codes **RESULTS:** 19,984 patients with MS were identified, 18,269 from commercial payers and 1715 from Medicaid. Patients in the Medicaid group were younger (44.4 vs 48.8 years) and female (81.5% vs. 76.8%) compared to Commercial group, respectively. Although total annual costs related to the care of MS for the groups reflected a modest difference ($31,107 commercial; $33,344 Medicaid), costs associated with specific service categories varied greatly. Pharmacy costs were considerably less in the Medicaid group; however inpatient and emergency room costs were as much as 5 times higher. The lower pharmacy costs in the Medicaid group are related to lower use of disease-modifying treatments (DMTs); overall use of DMTs in the Medicaid group was seen in 32.5% of patients; while in the commercial patient group was 52.1%. Multivariate regression will be performed to examine the differences in cost and utilization adjusting for differences in baseline characteristics. **CONCLUSIONS:** This analysis illustrates that notable variances exist in consumption of health care resources between patients enrolled in privately and publically funded health care programs. These variances may have additional implications relating to outcomes specific to MS.

PND32

ANALYSIS OF HEALTH CARE RESOURCE USE AND COST IN DMT TREATED VERSUS NON-DMT TREATED PATIENTS WITH MULTIPLE SCLEROSIS IN THE UNITED STATES

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BACKGROUND: Multiple studies have demonstrated the benefits of DMTs in slowing disease progression; however cost of the DMTs is an issue given the current pricing pressures. This study evaluates the comparison of HRU and associated cost to provide the overall economic benefits of treatment with DMTs. **OBJECTIVES:** To compare populations, costs, and health care resource utilization (HRU) in patients with MultipleSclerosis (MS) treated with a disease modifying therapy (DMT) versus those who were not (Non-DMT). **METHODS:** A retrospective analysis of integrated medical and pharmacy claims data were analyzed inpatients with a diagnosis of MS (ICD -9 of 340.0) during 2012. There were 2 cohorts, those treated with a DMT and those not treated, (Non-DMT) for the entire 12 months by the presence or absence of relevant NDC and HCPCS codes. **RESULTS:** 10,876 patients comprised the DMT cohort compared to 25,431 in the Non-DMT cohort. The two study groups were similar across a number of demographic variables including gender and age. When comparing HRU, significant differences were found in the DMT vs. Non-DMT treated groups. The unadjusted analysis showed that there was a 39.2% reduction in ER visits (15.68/100 vs. 24.25/100), a 35.9% reduction in MS related hospitalizations (46.64/100 vs. 76.62/100) and a 15.6% reduction in hospitalization length of stay (5.14 vs. 6.09), respectively. The average cost per patient for the DMT treated group was $61,698.16 ($33,983.87 due to DMT cost) compared to the total average cost per patient of $43,772.72 in the Non-DMT treated group. Multivariate regression will be performed to examine differences in cost and utilization adjusting for differences in baseline characteristics. **CONCLUSIONS:** Although the total costs of treatment in the DMT group were substantially higher than in the Non-DMT group as expected, we found significantly beneficial reductions in HRU use that are costly drivers in health care.

PND33

DRIVERS OF UTILIZATION AMONG PATIENTS WITH MUCOPOLYSACCHARIDOSIS IN THE HOSPITAL SETTING

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OBJECTIVES: Mucopolysaccharidosis (MPS) is a rare metabolic disorder with a wide spectrum of symptoms affecting the bone, skeletal system, and organs of affected individuals. The severity of symptoms varies widely. The objective of this study is to examine drivers of hospital utilization in MPS patients. **METHODS:** A retrospective descriptive study was conducted on a cross-section of MPS discharges in the MedAssets health system data for inpatient (N=527) and outpatient (N=10450) visits from 2009 through 2013. Negative binomial multivariable regression was used to identify significant drivers of inpatient and outpatient visits and inpatient length of stay (LOS). **RESULTS:** The sample included 1454 unique patients from 216 hospitals. More than half of thedischarges (66.7%) were male with 87.3% less than 18 years old and 8.7% between the ages of 18 and 29. The most common comorbid conditions in inpatients were chronic obstructive pulmonary disease (27.1%), respiratory failure (24.1%), pneumonia (20.5%), heart valve disorders (18.6%), epilepsy and seizures (17.8%), and hypertension (16.1%). In outpatients the most common comorbidities were delayed mental development (7.9%), musculoskeletal disorders (6.9%), hypertension (6.9%), and heart valve disorders (5.7%). The average number of outpatient visits was 7.1 with primary drivers including esophageal reflux (IRR=1.73, p<.001), lack of development (IRR=1.69, p<.001), gastrointestinal issues (IRR=1.47, p<.01), and hydrocephalus (IRR=1.52, p<.05). While the average number of inpatient visits was less than 1 the average LOS was 11.47. Respiratory failure (IRR=1.58, p<.001) and vein disorders (IRR=1.71, p<.01) were associated with inpatient visits. In addition to teaching status and region drivers of LOS were hypertension (IRR=1.64, p<.001), respiratory failure (IRR=1.50, p<.01), cardiovascular disorders (IRR=3.91, p<.01), pneumonia (IRR=1.40, p<.05), and vein disorders (IRR=1.71, p<.05). **CONCLUSIONS:** MPS patients average more than one outpatient visit per year and when hospitalized have long LOS. Drivers of utilization vary in the inpatient and outpatient setting.

NEUROLOGICAL DISORDERS – Patient-Reported Outcomes & Patient Preference Studies

PND34

EFFECT OF IMPROVING ADHERENCE TO DISEASE-MODIFYING AGENTS ON HEALTH CARE RESOURCE UTILIZATION AND MEDICAL COSTS IN PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: Prior studies have compared multiple sclerosis (MS) patients who are adherent to disease-modifying drug (DMD) therapy with those who are not, but have not analyzed the effect of varying levels of adherence on patient outcomes. This study characterized the benefits and cost offsets of increasing adherence to DMDs. Health care costs and resource use were assessed for patients with different adherence levels at various periods following DMD initiation. **METHODS:** A retrospective analysis was conducted using OptumHealth Reporting and Insights employer claims database on MS patients (≥2 diagnoses of ICD-9-CM 340.xx) initiating DMD therapy in 2002 through Q1 2012. Direct medical costs (reimbursements to providers), indirect costs (disability payments and employer workloss costs), and resource use were analyzed in the six months prior to (baseline) and up to 36 months following (observation period) initiation. Adherence, persistence, and other outcomes were measured at 6, 12, 24, and 36 months, and stratified by DMD adherence level. **RESULTS:** 1,538 patients met the selection criteria (baseline age 43.6 years, 63% female). Adherence measured by proportion of days covered (PDC) declined from 82% at 6 months to 67% at 36 months following initiation (medication possession ratio of 79% over the observation period). By 36 months, 42% of patients had discontinued DMD therapy; 22%, 31%, and 47% of patients had PDC<40%, 40% to 79%, and ≥80%, respectively. Non-DMD direct costs ($36,119, $30,277, and $25,886) and indirect costs ($23,194, $16,872, and $13,568) decreased substantially with higher adherence (PDC<40%, 40% to 79%, and ≥80% at 36 months, respectively). Higher adherence was also associated with lower all cause and MS-related inpatient admissions and emergency visits. Similar trends were observed at each follow-up period. **CONCLUSIONS:** This study shows higher adherence to DMD therapies is associated with lower non-DMD medical and indirect costs and decreased health care resource use for MS patients.

PND35

ADHERENCE OF MULTIPLE SCLEROSIS PATIENTS TO DISEASE MODIFYING TREATMENT AND ITS IMPACT ON QUALITY OF LIFE

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OBJECTIVES: Disease-modifying therapies (DMT) play an important part in the treatment of Multiple Sclerosis (MS). Non-Adherence to DMT affects therapy success and thereby disturbs Health Related Quality of Life. The present study investigates patient adherence to approved DMTs for MS among geographically and culturally diverse patient populations and their impact on health related quality of life. **METHODS:** The study was an observational multinational post marketing study. 2,566 patients 18 years or older with a documented diagnosis of relapsing-remitting MS (RRMS) and monotherapy with current DMT from Argentina, Australia, Austria, Belgium, Brazil, Canada, Czech Republic, Denmark, France, Germany, Iran, Ireland, Israel, Italy, Mexico, The Netherlands, Portugal, Spain, Sweden, Switzerland, UK, and Venezuela were included. Retrospective medical data about diagnosis and therapy were documented by physicians or nurses. For the purpose of patient reported outcome assessment, the MS International Quality of Life Questionnaire (MusiQoL) was selected. **RESULTS:** "Adherence" was operationally defined as: "Not missing a DMT injection or changing dose within 4 week prior to study". The study findings revealed that 75.0% of the patients were adherent. 12.6% of all patients forgot to administer injections compared to 50% of non-adherent patients.The most common reasons for non-adherence were forgetting to administer the injection, being tired of taking injections, pain at injection, and injection anxiety. Compared to non-adherent patients, the disease history of adherent patients showed shorter disease duration (adherent: median 6 years; non-adherent: Median 7 years.), significantly shorter treatment time (30 months vs. 36 months; p<.001) and a better MusiQoL score (18.0 vs. 22.0; p<.001). **CONCLUSIONS:** Non-adherence to DMTs affects QoL of MS-Patients. Special attention should be given to the causes for non-adherence. Reminder systems for injections can overcome the most frequent reason for non-adherence.

PND36

PATIENT-REPORTED MOTIVATIONS FOR MEDICATION SWITCHING AND/OR ADHERENCE CHALLENGES AMONG PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES: MS is a chronic, progressive, autoimmune disease that is characterized by episodes of worsening symptoms or relapses. Patient adherence to medications can help reduce or lessen relapses; however, non-adherence is a recognized problem in patients with MS. The objectives of this study are to better understand patients' reason(s) for switching and/or not being adherence to their medications. **METHODS:** We extracted 150 records for MS patients from a unique database of physician-patient interactions (RealHealth Data). Using Atlas.ti, we analyzed these records to uncover trends for medication switches and/or non-adherence, i.e., when, why and how patients stopped, what if anything they took as a replacement or an addition as well as to the patients' reaction(s) to new medication or non-medication. **RESULTS:** On average, patients' ages ranged from 18-45, 66% of patients reported their pain as a 6 or 8 (on a scale out of 10) and 72% reported actively taking supplements in addition to their prescribed medications. Patients' functional disability was similar to the general MS population, with a noted variability of motor skills. The medications prescribed to these patients included: Aubagio (3%), Copaxone (22%), Extavia/Betaseron (15%), Gilenya (17%), Rebif (14%), Tecfidera (10%) and Tysabri (19%). Patients' reported